

REMARKS

In response to the action, Applicant has amended claims 1, 5, 6 and 10. Applicant respectfully requests reconsideration in view of the amendments, the request for continuing examination and following remarks.

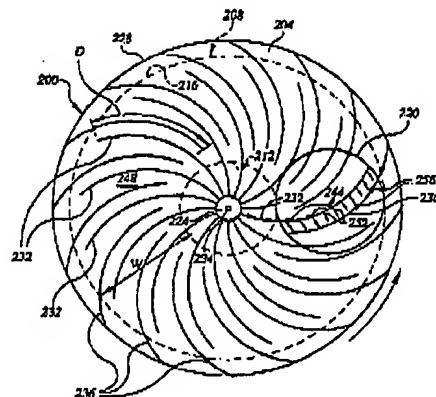
Applicant's attorney thanks the Examiner for the interview of October 27, 2005 and agrees with the Examiner's summary. Applicant thanks the Examiner for undergoing the extra effort to locate Applicant's attorney by obtaining my cell phone number to schedule the interview. During the interview, the Examiner recommended amendments to the physical structure of the pad itself. In response, Applicant has amended the physical structure of the pad itself to further distinguish from the cited reference.

Applicant has amended claims 1, 6 and 10 to clarify the limitation that the first plurality of grooves have "a second end" that terminates within the polishing region radially inward of the outer peripheral edge and radially outward of the rotational axis. This amendment clarifies the fact that the grooves terminate in the polishing region not the peripheral edge. Support for the amendment is found at paragraphs 23, lines 1 and 2, and the last three lines of paragraph 22 of the specification and rotational axis 234 of the drawing. Applicant has also amended claims 1, 6 and 10 to clarify the limitation that the second plurality of grooves have "a second end" that terminates radially outward of the second end of the first plurality of grooves. Support for the amendment is found at paragraphs 23 and 24 and Figures 2 to 5. Applicant respectfully submits that these amendments enter no new matter.

In addition, claim 5 now includes a second set of branched collection grooves that act in combination with the branched distribution grooves. The specification in paragraphs 32 and 33

provides a basis for the limitation. Applicant respectfully submits that this amendment enters no new matter.

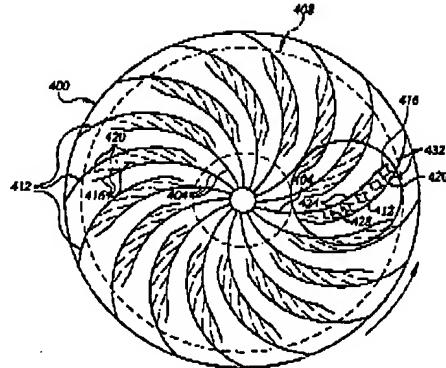
The action rejected claims 1 to 4 and 6 to 10 under 35 U.S.C. § 102 (b) as being anticipated by Robinson et al., 5,990,012 ("Robinson"). In particular, the action relied upon Robinson's Figure 7 disclosing a polishing pad having a first set of grooves or channels wherein the first set of grooves has a first end in the central region and a second end within the polishing region because the entire pad could be used for polishing. Unlike the claimed invention where grooves terminate in the polishing region at a location inward of the peripheral edge, the Robinson grooves all have second ends that terminate in the outer peripheral edge. Robinson does not disclose or suggest a planar pad having a first plurality of grooves wherein the grooves of the first plurality have a first end in the central region and a second end located in the polishing region with the second end being radially inward of the outer peripheral edge and radially outward of its rotational axis. For example, outflow grooves 232 have an end spaced radially inward of peripheral edge 228. In addition, Robinson does not disclose a second plurality of grooves having an end that terminates radially outward of the second end of the first plurality of grooves—the Robinson grooves all terminate at the periphery. The claimed discontinuous first set and second set of grooves can improve slurry utilization during chemical mechanical polishing of semiconductor substrates. Thus, since Robinson does not disclose or suggest 1) a planar pad having a first plurality of grooves with a second end located in the polishing region wherein the second end is radially inward of the outer peripheral edge and radially outward of its rotational axis; or 2) a second



plurality of grooves having an end that terminates radially outward of the second end of the first plurality of grooves, Applicant respectfully submits that claims 1 to 4 and 6 to 10, as amended, are not anticipated by Robinson under 35 U.S.C. § 102 (b).

The action rejected claim 5 under 35 U.S.C. § 103 (a) as being obvious in view of Robinson and Burke et al., 5,645,469 ("Burke"). In particular the action relied on Robinson anticipating all the limitations of claim 5 except for a plurality of branching grooves, and Burke teaching a plurality of branching grooves (26) connecting radial grooves. As above, Applicant submits that Robinson does not anticipate or suggest the limitations of claim 5, as amended. Additionally, Burke does not disclose or suggest the claimed branching distribution grooves and collection grooves. For example, the Burke reference does not disclose branched distribution grooves 416 with branched collection grooves 420. The Burke reference simply teaches branching with circular grooves and does not teach using branch grooves to distribute polishing fluid to a polishing region and collecting polishing fluid from the polishing region with a second set of branch grooves. Thus, since Burke fails to disclose or suggest the branching grooves defined by claim 5, and Robinson fails to disclose or suggest the other limitations of claim 5, Applicant respectfully submits that claim 5 is patentable over the combined references. The advisory action dated October 14, 2005 has indicated that claim 5 appears to include allowable subject matter.

The action rejected claims 1 to 4 and 6 to 10 under the judicially created doctrine of double patenting in view of claims 1 to 10 of Muldowney, 6,843,711 ("the '711 patent"). In



particular the rejection relies upon the '711 patent anticipating the claimed invention. The amended claims require 1) a first plurality of grooves having a first end in the central region and a second end located in the polishing region, and the second end being radially inward of the outer peripheral edge and radially outward of its rotational axis; and 2) a second plurality of grooves spaced from the first plurality of grooves that terminate in the outer peripheral edge or radially outward from the polishing region. The '711 patent does not appear to disclose these limitations. Furthermore, since the claimed discontinuous first set and second set of grooves can improve slurry utilization during chemical mechanical polishing of semiconductor substrates, they are patentably distinct from the '711 patent. Thus, since the claims of the '711 patent does not anticipate or suggest the amended claims, the claims of the subject application are patentably distinct from the '711 patent; and Applicant respectfully submits that the double patenting rejection is inappropriate for claims 1 to 10, as amended.

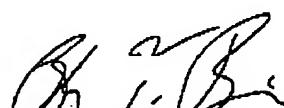
The action rejected claim 5 under the judicially created doctrine of obviousness-type double patenting in view of claims 1 to 10 of the '711 patent and Burke. In particular the rejection relied on Burke disclosing a plurality of branching grooves and the '711 patent anticipating the other limitations of claim 5. Burke does not disclose a plurality of distribution with collection branching grooves. In addition, the claimed subject matter of the present invention is not anticipated or suggested by the '711 patent. Applicant, therefore, respectfully submits that claim 5 is patentably distinct over the claims of the '711 patent in view of Burke under the judicially created doctrine of obviousness-type double patenting.

Applicant believes that the amended application is in condition for allowance and respectfully requests reconsideration. Please call Applicant's Attorney at (302) 283-2136 if a call would expedite prosecution.

Respectfully submitted,

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Date



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